

WILDER (B.G.)



SKETCH OF DR. JEFFRIES WYMAN.

By BURT G. WILDER,
PROFESSOR OF ZOOLOGY IN CORNELL UNIVERSITY.

Reprinted from THE POPULAR SCIENCE MONTHLY, January, 1875.

WITHIN a year, science has lost two of her greatest leaders, Louis Agassiz and Jeffries Wyman. With the life, the works, and the appearance of the one, all are familiar. But the other was hardly known outside of strictly scientific circles. He rarely gave popular lectures, and never wrote any thing that attracted general attention. Yet his influence upon the progress of science in this country has been very great, and he had for years been regarded by all as the highest anatomical authority in America, and the compeer of Owen, Huxley, and Gegenbauer, in the Old World.

JEFFRIES WYMAN was born at Chelmsford, near Lowell, Massachusetts, August 11, 1814. His father was a physician, as is his surviving brother. He was prepared for college at Phillips (Exeter) Academy, entered Harvard University in 1829, and was there graduated; During his last year in college he had an attack of pneumonia, which nearly proved fatal; this doubtless predisposed him to the pulmonary weakness from which he suffered during the latter part of his life, and from which he died on the 4th of September, 1874, at Bethlehem, New Hampshire.

Soon after his graduation he entered the Harvard Medical School, and, in 1836, became "house medical student" in the Massachusetts General Hospital.

In 1837 he received the degree of M. D. His graduation thesis was upon the eye, and accompanied by drawings. It does not appear to have been published, but, in September of the same year, the *Boston Medical and Surgical Journal* contained a paper by him upon the "Indistinctness of Images formed by Oblique Rays of Light." Soon afterward he became Demonstrator of Anatomy in the Medical School under Prof. J. C. Warren, whose chair he was destined afterward to fill.



In 1839 he accepted the curatorship of the newly-founded Lowell Institute. Two years later he delivered therein his first course of public lectures (of which no report has come under our notice), and with the money so earned went abroad for a year to pursue his medical and scientific studies under the great European masters. He had already, since 1838, published, in the *American Journal of Science*, several brief papers upon anatomical and physiological matters.

In 1843 there were published, in the *Journal of the Boston Society of Natural History*, anatomical descriptions of two gasteropod mollusks (*Tebennophorus Carolinensis* and *Glandina truncata*). Likewise a paper on the chimpanzee (*Troglodytes niger*), in which, with characteristic modesty, his account of its organization (though subversive of some of Owen's previous conclusions) is subordinated to Dr. Savage's remarks upon its habits and external characters. The same year he was appointed Professor of Anatomy in the Hampton-Sidney Medical College, at Richmond, Virginia. During his four years' stay his contributions to science included some notes upon fossil remains of vertebrates, and longer papers upon the blind fish of the Mammoth Cave and the teeth of the gar-pike (*Lepidosteus*). The latter paper is illustrated by microscopic sections, showing the close resemblance of the gar-pike's teeth to those of the fossil batrachian *Labyrinthodon*. The article closes with the suggestion that some of the separate teeth then referred by Owen to the latter genus might really belong to Lepidostean forms. This paper alone, though little known and never quoted by its author, would serve to show what manner of man was rising in America.

In 1847, at the age of thirty-three, he was chosen to the Hersey Professorship of Anatomy, at Cambridge. The year of his inauguration was signalized by his account of the gorilla, based upon specimens forwarded to him by Dr. Savage. This was the first scientific description of the new *Troglodytes*.

From that time forward his scientific progress was rapid and unbroken. He collected, he investigated, he lectured, he wrote. His admirable course of lectures upon Comparative Physiology, before the Lowell Institute, in 1849 (the report of which in pamphlet form has long been out of print), soon caused him to be regarded as the foremost among American anatomists and physiologists.

During this period, and indeed until within a few years of his death, Prof. Wyman published frequent brief notices of new animals, of points of structure and function, the value of which is in no way to be measured by their length. Almost any one of them would have served a less modest man for an extended memoir, while several contain the elements of interesting popular articles. So far from this, Prof. Wyman seemed to attach little personal importance to them, rarely referred to them, or took any pains to have them reproduced elsewhere. Many were, however, copied into European journals.

His first extended paper was "On the Nervous System of *Rana pipiens*" (the bull-frog). It covers fifty quarto pages, with two plates, was published by the Smithsonian Institution in 1853, and should be in the hands of every student of either human or comparative anatomy, as the clearest introduction to the most complex of animal structures.

Somewhat similar to the last, not quite so long, but even more replete with fact and philosophy, is the "Observations on the Development of *Raia batis*" (a skate), published by the American Academy of Arts and Sciences in 1864. This was based upon few materials, but sufficed to convince him, and all naturalists, that the skate ranks higher than the shark, since the latter retains through life a general form resembling one of the stages through which the former passes during its development.

Those who knew Wyman's nature may well imagine how he shrank from any thing like a discussion of two great questions upon which so much has been written during the past fifteen years, namely, the "Origin of Species" and "Spontaneous Generation." But, aside from his natural desire to know and teach the most correct doctrine upon these subjects, his prominent position made it imperative that he should consider them carefully. Respecting evolution, he evidently felt, with Prof. Gray, that, "upon very many questions, a truly wise man remains long in a state of neither belief nor unbelief; but your intellectually short-sighted people are apt to be preternaturally clear-sighted, and to find their way very quickly to one or the other side of every mooted question." In 1863 he wrote as follows: "We must either assume, on the one hand, that living organisms commenced their existence fully formed, and by processes not in accordance with the usual order of Nature, as it is revealed to human minds, or, on the other hand, that each species became such by progressive development or transmutation; that, as in the individual, so in the aggregate of races, the simple forms were not only the precursors, but the progenitors of the complex ones, and that thus the order of Nature, as commonly manifest in her works, was maintained."

No one can help seeing that he inclined toward belief in the general doctrine, but he neither indorses "Darwinism" nor denounces those who find themselves unable to accept "derivation" in any sense.

Regarding the appearance of organisms *de novo*, he never allowed himself to express a final opinion. He published two papers embodying the results of numerous and accurate experiments, and, we have reason to know, was still continuing his observations at the time of his death.

The general question to which Prof. Wyman gave most attention, until called from it by the Archæological Museum, was that of Organic Symmetry, especially as manifested in the limbs. Accepting the usual

belief in an homology of the front and hind limbs, he associated therewith the idea first put forth by Oken, that the two ends of the body are symmetrical, or reversed repetitions of each other, as are the right and left sides. The application of this doctrine to the limbs makes the ulna the homologue of the tibia, the radius of the fibula, and the thumb of the *little-toe*, instead of the great-toe, as ordinarily believed.

So radically does this interpretation of "intermembral homologies" differ from that of most anatomists, that it is not strange that its acceptance is, at present, confined to a very few (Foltz, in France, and, in this country, Dana, Coues, Folsom, and the writer). But we are encouraged by the reflection that our leader never gave even a qualified assent to any doctrine which did not prove to be in the main correct.

Upon no other single problem did he bestow so much thought. And, as may be inferred, it is in his treatment of this question that his peculiar characteristics appear. In the adoption of new ideas he manifested a wise caution, which, contrasted with the haste of others less well informed, illustrates the maxim, "Fools rush in where angels fear to tread." We recall his freedom in discussion with his students and his kindness in aiding their advancement, even to his own apparent detriment; his modesty, occasioning a lack of reference to his own papers or to unpublished investigations; his critical acumen, which was the more searching and useful from its entire freedom from personality; and, finally, here shine forth in their greatest brilliancy those rare qualities which enabled him, when occasion required, to overlook the delusive charms of teleology, though upheld by popular interest and theological authority, and to regard her plainer but more reliable sister, morphology, supported by relative position and mode of development.

In 1866 Prof. Wyman was named one of the seven trustees of the Peabody Museum of American Archæology and Ethnology, and became curator. For this work he was peculiarly fitted, both by nature and by his extensive observations upon crania, and his frequent investigations of shell-heaps, etc., during the trips to Florida, which his health had of late years forced him to make. Our space will not permit even a brief sketch of his labors in this new field; the results are modestly recorded in his annual reports. At present, the Museum is very extensive and admirably arranged. Had Prof. Wyman been spared for another ten years, one can hardly predict its importance. Of this, and of his own anatomical collections, the value is wholly out of proportion to the size or actual cost in money, for they represent the constant and skillful labor of a great anatomist during a quarter of a century. The label upon every specimen tells the truth so far as he knew it; and in the descriptive catalogues are rich treasures of fact and thought as yet unrevealed.



PROFESSOR JEFFRIES WYMAN.

Prof. Wyman always shrank from public notice, and from positions in which this was involved. He attended several meetings of the American Association for the Advancement of Science, and served therein as president, treasurer, and secretary. But his communications were few, and comparatively unimportant. He was a member of the American Academy of Arts and Sciences, and was named by Congress one of the original fifty members of the National Academy of Science, but soon resigned. In strong contrast with his slender relations with these organizations is his record in connection with the Boston Society of Natural History. He early became an ardent member, served as secretary, and as curator of several departments, and in 1856 became president. This office he held until 1870, when he offered an unqualified resignation.

Meagre as is the above account of his outer life, we shrink yet more from any such estimate of his abilities and his personal character as the present occasion will permit. Admired and trusted by his associates, by the younger naturalists he was absolutely adored. Ever ready with information, with counsel and encouragement, so far from assuming toward them the attitude of a superior, he on several occasions permitted his original observations to be more or less merged within their productions. The universal regard in which he was held by them is, in the writer's case, intensified by the sense of peculiar obligations, which might cloud his judgment of any ordinary man; but to no man more fitly than to Wyman could be addressed the lines:

"None knew thee but to love thee,
Nor named thee but to praise."

Nor was any criticism ever made upon him, from any quarter, other than upon his extraordinary freedom from personal ambition, and his aversion to public notice or display.

Wyman's anatomical work was absolutely free from zoological bias, and his statements were always received as gospel by both parties to a controversy. He might not tell the whole truth, for he might not see it at the time; but what he did tell was "nothing but the truth" so far as it went. The hottest partisan felt that a figure or description of Wyman's was, so far as it went, as trustworthy as Nature herself.

Without brilliancy, Dr. Wyman combined qualities rarely found in the same individual. No man of our time has surpassed him in the love of Nature for its own sake, free from the hope of position, power, or profit; in keenness of vision, both physical and mental; in absolute integrity, with the least as well as the greatest things; in industry and perseverance; and in method, whether for the arrangement of collections, or the presentation of an idea. And if to these had been adjoined a tithe of the ambition displayed by smaller men,

and had his health and strength been at all equal to his mental powers, no one can doubt that his attainments, his productions, and his reputation, would have been surpassed by none of his contemporaries.

However much we may, for our own sakes, regret that such was not the case, we know that into his mind never entered the shadow of bitterness. His recognition of others' labors was full and generous; his mind was upon the facts and principles of Nature, and regarded not the medium through which they were obtained; and if he even prayed for health and strength, it was surely not for his own advancement, but because he felt within himself the desire and the ability to learn and to teach the truth.

Dr. Wyman's reputation was less wide than that of some others; but it was deeply rooted. As the years roll on, and as the final estimate is made of the value of what has been done in this century, we may be sure that the name of Jeffries Wyman will stand high among those who have joined rare ability and unwearied industry with a pure and noble life. To use his own words upon a like occasion, "Let us cherish his memory and profit by his example."

